

Bahruz Jabiyev

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Research interests

Web & Network Security, Biomimetic Security, Distributed Systems Security

Education

- 2017 – 2023 **Northeastern University** – Boston, MA
PhD in Cybersecurity
Dissertation: Systematic Search Techniques for HTTP Server Chain Attack Vectors
Committee: Engin Kirda, Alina Oprea, David Choffnes, Zakir Durumeric, David Evans
- 2014 – 2016 **Istanbul Sehir University** – Istanbul, Turkey
MSc in Cybersecurity Engineering
- 2008 – 2013 **Middle East Technical University** – Ankara, Turkey
BSc in Computer Engineering

Professional Experience

- 11/2023 – present **Dartmouth College** – Postdoctoral Scholar | Hanover, NH
– Working on parsing discrepancies between Electronic Medical Record systems
- 04/2023 – 10/2023 **Cold Spring Harbor Laboratory** – Computational Postdoc | Cold Spring Harbor, NY
– Studied the immune system and virology to derive offensive and defensive algorithms
- 05/2022 – 09/2022 **Google** – Research Intern | Cambridge, MA
– Built a coverage-guided differential fuzzing framework for HTTP servers in Google Cloud
- 06/2019 - 08/2019 **Facebook** – Security Engineer Intern | Menlo Park, CA
– Expanded a tool which was used only for terrorism investigations, to be also used for child abuse and human trafficking investigations
- 12/2014 - 07/2017 **Biznet** – Penetration Tester | Istanbul, Turkey
– Reported security vulnerabilities in web applications and internal networks of the customers
– Developed various tools for the automation of security-related tasks
– Designed and delivered a training program for future penetration testers
- 10/2014 - 12/2014 **Sekizbit** – Web Developer | Istanbul, Turkey
– Contributed to the development of a patient portal application for dental practices

Teaching Experience

- 09/2020 - 12/2021 **Teaching assistant** – Northeastern University
Introduction to Software Security (CY 5770)
Software Vulnerabilities and Security (ECE 5641)
- 10/2021 **Guest Lecturer** – Northeastern University
Software Vulnerabilities and Security (CY 5770)
- 2017 **Cybersecurity Trainer** – Biznet
Web and Network Penetration Testing

Mentoring Experience

- 05/2022 - present **Seyed Ali Akhavan** – PhD in Computer Science, Northeastern University
- 04/2022 - 03/2023 **Anthony Gavazzi** – PhD in Computer Science, Northeastern University
- 03/2022 - 06/2023 **Cem Topcuoglu** – PhD in Cybersecurity, Northeastern University

Publications

- 2024 **Untangle: Multi-Layer Web Server Fingerprinting**
 Cem Topcuoglu, Kaan Onarlioglu, Bahruz Jabiyev, Engin Kirda
Network and Distributed System Security Symposium (NDSS)
- 2022 **FRAMESHIFTER: Security Implications of HTTP/2-to-HTTP/1 Conversion Anomalies**
 Bahruz Jabiyev, Steven Sprecher, Anthony Gavazzi,
 Tommaso Innocenti, Kaan Onarlioglu, Engin Kirda
USENIX Security Symposium
- 2021 **T-Reqs: HTTP Request Smuggling with Differential Fuzzing**
 Bahruz Jabiyev, Steven Sprecher, Kaan Onarlioglu, Engin Kirda.
ACM Conference on Computer and Communications Security (ACM CCS)
- 2021 **Preventing Server-Side Request Forgery Attacks**
 Bahruz Jabiyev, Omid Mirzaei, Amin Kharraz, Engin Kirda
Annual ACM Symposium on Applied Computing (ACM SAC)
- 2021 **Game of FAME: Automatic Detection of Fake Memes**
 Bahruz Jabiyev, Jeremiah Onaolapo, Gianluca Stringhini, Engin Kirda
Conference for Truth and Trust Online (TTO)
- 2021 **FADE: Detecting Fake News Articles on the Web**
 Bahruz Jabiyev, Sinan Pehlivanoglu, Kaan Onarlioglu, Engin Kirda
International Conference on Availability, Reliability and Security (ARES)

Work In Progress

- In Progress **Bypassing Web Application Firewalls with HTTP Parsing Discrepancies**
Ali Akhavani, Bahruz Jabiyeu, Engin Kirda
- In Progress **Discrepancy-guided Fuzzing for HTTP/2-to-HTTP/1 Conversion Anomalies**
Anthony Gavazzi, Ryan Williams, Bahruz Jabiyeu, Engin Kirda

Professional Service

- 2023, 2024 Program Committee Member – ACM CCS
- 2022 Faculty Hiring Committee Member – Khoury College, Northeastern
- 2022, 2023 Organizing Social Events – ACM CCS, NDSS
- 2019 External Reviewer – WWW conference

Selected Achievements and Awards

- 2023 **Student Travel Grant**
Network and Distributed System Security Symposium (NDSS)
One of 17 that was awarded from over 80 applications to attend the NDSS conference
- 2022 **Best Research Paper Nomination**
NYU CSAW North America Applied Research Competition
T-Reqs paper was invited to compete as one of 83 top-quality research papers in cybersecurity
- 2021, 2022 **Top 10 Web Hacking Technique Nomination**
PortSwigger Research
Techniques of T-Reqs and FRAMESHIFTER papers were nominated for this award
- 2019 **Hacking Competition Winner**
Cybersecurity Beanpot
Took the 4th place in an individual hacking competition for students from Boston Area colleges
- 2017 **Offensive Security Certified Professional**
Offensive Security
Passed a certification 24-hour-long exam with the goal to compromise at least 3 out of 5 systems

Media Coverage

- 2021 **New differential fuzzing tool reveals novel HTTP request smuggling techniques**
The Daily Swig
- 2021 **HTTP request smuggling vulnerability in Apache Tomcat 'has been present since 2015'**
The Daily Swig
- 2021 **Bug Bounties in Windows/WebKit, Edge Hardening, OAuth Hardening, & GoDaddy Breach**
Security Weekly